REMARKS

The Office Action dated May 20, 2003 has been reviewed, and the comments of the U.S. Patent Office have been considered. By this Amendment, claims 1, 5, 8, 10, and 12 have been amended. Accordingly, claims 1-17 are respectfully submitted by Applicant for reconsideration by the Examiner.

The formal drawing sheet of Figure 2 submitted January 3, 2001, has been disapproved because it allegedly introduces new matter into the drawings. The Office Action, however, does not identify which features identified in formal Figure 2 constitute new matter. Applicants respectfully note that formal Figure 2 was submitted to correct the informalities identified in the Office Action dated November 20, 2000. Applicant respectfully submits that that formal drawing of Figure 2 illustrates the same enlarged cross-sectional view of the fuel injector assembly shown in Figure 1 as the originally filed informal Figure 2. Applicant further notes that the reference numerals used for informal Figure 2 identify the same features in formal Figure 2, which is consistent with the detailed description of Figure 2 starting at page 4, line 20 of the originally filed specification. Accordingly, Applicant respectfully requests the Examiner to indicate that the substitute formal drawing sheet of Figure 2 does not indicate new matter, and that the new substitute formal drawing sheet of Figure 2 has been approved.

The drawings were objected to for failing to comply with 37 C.F.R. § 1.84(p)(5) because they do not include reference numeral 70 mentioned in the description. Applicant respectfully submits that substitute Figure 1 submitted January 3, 2001, includes reference numeral 70. Further, Applicant submits herewith a new substitute formal drawing Figure 2 adding reference numeral 70. Accordingly, Applicant respectfully requests that the objection to the drawings be withdrawn.

The drawings were objected under 37 C.F.R. § 1.83(a) for allegedly failing to show every feature of the invention specified in the claims. The Office Action asserts that the features of the first surface of the swirl generator disk adjacent to the outlet portion, and the first surface of the guide disk adjacent to the outlet portion, as recited in claims 5 and 10, are not shown in the drawings. Figure 2 shows an enlarged cross-sectional view of the fuel injector assembly of Figure 1. Figure 2 shows both a guide disk 78 and swirl disk 80 with respective surfaces.

Moreover, Figure 1 shows the outlet portion of a body 62. Although these features are not labeled with separate reference characters, Applicant respectfully submits that a person having ordinary skill in the art reading the specification in view of FIGS. 1 and 2 would understand that the features identified by the Office Action are illustrated in the drawings. Thus, Applicant respectfully request the withdrawal of the drawing objections.

Claims 5, 6, and 10 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement because the specification fails to recite what the claims (as originally filed) recited. MPEP § 2146.01 states that a claim is enabled if Applicant's originally filed disclosure—including the claims, drawings, and abstract—contains sufficient information regarding the subject matter of the claims so as to enable one skilled in the pertinent art to make and use the claimed invention. Claims 5 and 10 define the orientation of the surfaces of the swirl disk and guide disk in relation to the other features of the fuel injector. In particular, amended claims 5 and 10 recite the orientation of the swirl disk relative to the outlet portion of the body and the first face of the seat, and the guide disk relative to the outlet portion and the first surface of the swirl disk. Applicant respectfully submits that a person skilled in the art, reading claims 5, 6, and 10 in view of the originally filed disclosure, such as, for example, Figures 1 and 2, would understand the manner in which the guide disk and swirl disk are oriented in relation to the other features of the fuel injector. Accordingly, the rejection of claims 5, 6, and 10 under § 112, first paragraph should be withdrawn.

Claims 1-4, 8, 9, 11-16 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent 4,634,055 to Hans et al. ("Hans"). Claims 7 and 17 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hans in view of U.S. Patent No. 5,098,064 to Daly et al. Insofar as the rejections are applicable to amended claims 1, 8, and 12, applicant respectfully traverses these rejections because Hans or Daly, whether considered alone or in combination thereof, fails to teach or suggest features of the claimed invention as a whole.

Each of independent claims 1 and 8 recites a fuel injector. Each of the claims includes a seat disposed within a body. The seat has circumferential surfaces with a zone contiguous to a passageway of the body. Claim 12 recites a method of forming a fuel injector that has a seat disposed within a body. The method includes contiguously engaging an intermediate zone of a

circumferential surface of a seat to a passageway of a neck portion of the body. Support for this feature is provided in the originally filed specification in, for example, Figures 1 and 2.

In contrast, Hans shows a valve housing 1 partially surrounding nozzle body 9. As shown in FIGS. 1-3 of Hans, the nozzle body 9 has a portion surrounded by housing 1 and an injection opening 23 that extends outside valve housing 1. A valve seat 24 is adjacent the injection opening 23, and a portion of a nozzle 9 is outside of the housing 1. Applicant respectfully submits that Hans does not teach or suggest at least the claimed feature of a seat disposed within a body and a circumferential surface of the seat having a zone contiguous to a surface that defines a passageway through the body. MPEP § 2131 states that to anticipate a claim, a reference must teach each and every element as set forth in the claim. Accordingly, claims 1, 8, and 12 are patentable for at least this reason.

Furthermore, independent claims 1, 8, and 12 also include the feature of thermally isolating a second zone of the seat from a surface that defines the passageway of the body. In particular, claim 1 recites "a seal disposed between the second zone of the seat and the body so that the seal thermally isolates the second zone of the seat from the body." The Office Action states that Hans has a seal between a nozzle body 9 and a valve housing 1. However, the Office Action apparently fails to consider the feature of thermal isolation of a second zone of a seat from a body, as recited in claims 1, 8, and 12. The Examiner is respectfully reminded that the functional recitation of claims 1, 8, and 12 must be evaluated and considered, "*[j]ust like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used.*" *See*, MPEP 2173.05(g), page 2100-206 (8th Ed., Rev. 1, Feb. 2003). That is, when this functional recitation is evaluated and considered in relation to Han, the apparent conclusion that Han is capable of thermally isolating a specific portion of a seat by the Office Action must be supported by some explanation or objective evidence for such conclusion.

The claimed feature of thermal isolation is not shown or described in Hans. In particular, FIGS. 1-3 of Hans show a valve housing 1 partially surrounding nozzle body 9, and an O-ring disposed therebetween. Applicant respectfully submits that there is no discussion of the O-ring in the specification of Hans. In particular, Hans does not teach or suggest that the O-ring is used

to thermally isolate a second zone of nozzle body 9 from valve housing 1. Applicant further submits that Hans apparently does not discuss thermal isolation of any components of the fuel injector shown therein, and, therefore, fails teach or suggest the feature of thermally isolating the second zone of the seat from the body. Accordingly, claims 1, 8, and 12, are also allowable because Hans fails to teach or suggest all of the features of the claimed invention as a whole.

Notwithstanding the deficiencies of Hans, Daly is relied upon by the Examiner in an attempt to provide for the claimed invention as a whole, as recited in claims 7 and 17. Applicant respectfully submits that Daly fails to cure the deficiencies of Hans. Moreover, applicant respectfully asserts that, absent the benefit of applicant's disclosure, there is no motivation or suggestion to modify the fuel injector of Hans with components from an engine throttle body assembly of Daly. That is, there must be some objective evidence—separate from applicant's own disclosure—why one of ordinary skill in the art would be motivated into modifying a fuel injector of Hans with components from a throttle body assembly of Daly. Applicants respectfully submit that such objective evidence (demonstrated by, for example, prior art documents or judicial notice) has not been provided by the Office Action. Therefore, in the absence of such objective evidence, claims 7 and 17 are allowable.

Claims 2-7, 9-11, and 13-17, which depend ultimately from one of allowable claims 1, 8, or 12, are allowable for at least the same reasons, as well as for reciting additional features. Accordingly, claims 1-17 are in condition for allowance.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully requests the reconsideration and reexamination of this Application and allowance of the pending claims 1-17. Applicant respectfully invites the Examiner to contact the undersigned Applicant's representative if there are any outstanding issues that can be resolved via a telephone conference.

EXCEPT for issue fees payable under 37 C.F.R. §1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0310. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. §1.136(a)(3).

Respectfully submitted,

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